From: Rosenberg, Kathryn
To: Pepin, Rob
Subject: RE: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval
Date: Thursday, July 8, 2021 12:23:00 PM

Rob, thank you so much (as always) for all the useful info. It is good to know about waterqualitydata.us, I didn't know it existed. I'll spend some time going through the user guides and get to know the system and then try to schedule us a meeting to go over the quirks Friday or early next week if you have time. I haven't gotten the opportunity to learn the EPA Enterprise GIS system yet, so I'll mess around with that too.
I'll see if I can gather the info I need this way and reach out to Aaron Johnson to ask about a final version of the biotic ligand model missing data document if so.
I'm curious if other new hires know about the Water Quality Portal or how to use the Enterprise GIS system. Maybe if it's new to some other people as well, we could also have them on a call next week. I'll ask around.
Thanks again,
-Katie

From: Pepin, Rob <pepin.robert@epa.gov>
Sent: Wednesday, July 7, 2021 12:11 PM
To: Rosenberg, Kathryn <Rosenberg.Kathryn@epa.gov>
Subject: RE: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval
I will tackle the easy one first. Michigan rules and 40 CFR 132, appendix F requires a default dilution for lakes as 10:1. Unless the facility applied for a different dilution ratio and EGLE approved it, EGLE is correct in using the 10:1 dilution ratio.
As for hardness, pH, and DOC, I have not used the NSRA data system. I took a look at it and the system seems to have relevant data. My main concern is the data appear to be no later than 2007. Also, the data may have been put into the Water Quality Portal which I do use.
EGLE uses, according to the email chain, a pH of 7 and a hardness of 100 mg/L. I could see a hardness of 100 but I would think the pH might be higher – nearer 8. I have no idea what the DOC would be.
As for the Lake Guardian I have no idea where those data are kept. If you want to explore that route you should ask GLNPO. I'd ask Todd Nettlesheim, Amy Pelka, or Ted Smith to point you in the right direction. (Everyone else I knew in GLNPO quit or retired.)
The main system I use to get ambient data is the Water Quality Portal (waterqualitydata.us). It's a Federal government-run data system where all ambient data are to be dumped, including state data. There's a ton of data. It's easy to use but there are a couple of quirks in the data. You need to do two downloads: one to get station information and the second to get the data.
It would probably be easier to show you the Portal via a Teams meeting. I can explain more about the quirks then. Also, it is best to plot the station locations on a map in the EPA Enterprise GIS system because sometimes the data are entered more than once. (This happens when several agencies are sampling together.) The GIS system is easy to use also.
You don't have to establish accounts for either system. The Portal is public domain and all EPA employees have access to the GIS system (you do need your smart card, though).
I can't do a Teams meeting today. If you want me to show you just schedule a meeting. It shouldn't take more than an hour.
The only other option I have for the missing parameter data is our draft biotic ligand model missing

data document. By ecoregion EPA calculated reference conditions for things like hardness, pH, DOC, TOC, etc. I've attached the draft document. I don't know if it has been finalized (Aaron Johnson in Standards might know). You need to figure out the ecoregion DTE Monroe discharges in: EPA has an ecoregion web page that has ecoregional maps. Then for that ecoregion hopefully this document has the default values you need.

- ***Rob Pepin***

Robert Pepin | NPDES Programs Branch, US Environmental Protection Agency, Region 5 | 77 W Jackson Blvd, WP-15J, Chicago, IL 60604 | ph: (312) 886-1505 **| fx: (312) 980-8706 |** **Pepin.Robert@epa.gov**

From: Rosenberg, Kathryn <Rosenberg.Kathryn@epa.gov>
Sent: Wednesday, July 7, 2021 09:32 AM
To: Pepin, Rob <pepin.robert@epa.gov>
Subject: FW: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval

Hi Rob,

Just wanted to send you an update on the information I got from the State Aquatic Biologist for further analysis of Al concentrations in the DTE Monroe effluent. It's not terribly specific, so I tried to find some more specific data using EPA resources. I didn't have any luck. In addition, there are no Al measurements reported on the facility DMRs in ICIS.

Looking at the Aluminum Criteria Calculator https://www.epa.gov/wqc/aquatic-life-criteria-aluminum, it seems that at least hardness, pH, and DOC are needed.

Do you have any advice for finding this information in the future? I didn't know how to sort through the NRSA Assessment data. Any tips and tricks would be appreciated.

Thanks again,

-Katie

From: Bosak, Amanda (EGLE) <BosakA@michigan.gov>
Sent: Wednesday, June 30, 2021 7:23 AM
To: Rosenberg, Kathryn <Rosenberg.Kathryn@epa.gov>
Subject: RE: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval

Tarek sent me a note after the meeting this afternoon and let me know you were requesting information for WQBEL development. That's helpful. WRD doesn't do a lot of Great Lakes monitoring and relies on EPA – Lake Guardian and NRSA National Coastal Condition Assessment. If you want actual ambient data, you may want to look at those resources.

Hardness

WRD typically uses a default hardness of 100 mg/L for Great Lake discharges

pH

WRD typically uses a default pH of 7.0 S.U. unless the pollutant is more toxic at a higher pH.

Facility Flow

WRD use the maximum flow requested by the facility for WQBEL development. In this instance that is 1,978 million gallons per day (MGD). Actual effluent flow can be found here https://miwaters.deq.state.mi.us/nsite/map/results/detail/-9181143139346842118/documents and by typing DMR in the file search box.

Ambient Flow

We don't have ambient flow as it is a lake. WRD uses a 10:1 lake to effluent dilution

for lakes.
DOC
See above for possible data sources.
Hopefully this will give you a starting point.
Amanda Bosak
Unit Supervisor
Water Quality and Aquatic Nuisance Control Permits
Water Resources Division
Department of Environment, Great Lakes, and Energy
517-599-9820
Michigan.gov/EGLE | Follow Us

From: Rosenberg, Kathryn <Rosenberg.Kathryn@epa.gov>
Sent: Tuesday, June 29, 2021 11:10 AM
To: Bosak, Amanda (EGLE) <BosakA@michigan.gov>
Subject: RE: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval

Hi Amanda,
Just following up on my email below after the weekend.
Thank you,
-Katie

From: Rosenberg, Kathryn
Sent: Wednesday, June 23, 2021 4:52 PM
To: BosakA@michigan.gov
Subject: FW: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval
Hi Amanda,
I am currently reviewing the permit for DTE Monroe Plt (MI0001848) and would like some additional info. Do you have ambient water quality data for Lake Erie (AUID 041202000001-01)? I would like to see ambient hardness, DOC, pH, critical effluent and ambient flows.
In addition, if you have an updated GLWL chart for 2015-2021 that you could send over, that would be great!
Thank you,
Katie Rosenberg (she/her)
Permits Branch | USEPA-Region 5
77 W. Jackson Blvd, WP-16J
Chicago, IL 60604
rosenberg.kathryn@epa.gov | 312-886-6774

From: Buckmaster, Tarek (EGLE) <BUCKMASTERT@michigan.gov>
Sent: Tuesday, June 22, 2021 10:20 AM

To: Rosenberg, Kathryn <Rosenberg.Kathryn@epa.gov>
Cc: Ackerman, Mark <ackerman.mark@epa.gov>; Aiello, Christine (DEQ) <AielloC@michigan.gov>; alexanderc2@michigan.gov
Subject: FW: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval

As requested.

Tarek Buckmaster
Industrial and Storm Water Permits Unit Supervisor
Permits Section, Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
517-230-4233 I buckmastert@michigan.gov
Follow Us | **Michigan.gov/EGLE**

From: Buckmaster, Tarek (DEQ)
Sent: Monday, August 10, 2015 5:12 PM
To: Ramach, Sean <Ramach.Sean@epa.gov>
Cc: Ackerman, Mark (ackerman.mark@epa.gov) <ackerman.mark@epa.gov>; Alexander, Christine (DEQ) <ALEXANDERC2@michigan.gov>; Bosak, Amanda (DEQ) <BosakA@michigan.gov>
Subject: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval

I was able to get the submitted 316(a) demonstration materials from our Record Center. I am attaching a pdf of the Executive Summary. The full demonstration was submitted in three large volumes that covers a few thousand pages.

I have also attached two documents that provide long-term averages for Great Lakes water levels from 1918-2014. The original demonstration covered 1975-1976 when the maximum plume size of 1,503 acres was measured. The 316(a) hearing on October 21, 1976 included information stating that the largest measured thermal plume was 1,986 acres, but that the plant was not operating at full capacity at that time (2,750 megawatts). At that hearing, DTE stated that modeling predicted that under conservative assumptions, at an output of 3,150 MWs, the maximum thermal plume capacity would not likely exceed 2,500 acres.

The mean water level in Lake Erie from 1918-2014 is 571.33 feet. The 1,503 acre plume was measured in September 1975. At that time, Lake Erie was approximately 572.8 ft. While higher than the mean water level, it was not at an extremely higher level. Lake Erie had recently recovered from a low water period that ran from the mid-50's to 1970.

When the plume was re-evaluated in 2003, Lake Erie was approximately 571 ft. While lower than the mean water level, the level in 2003 was not significantly lower than the mean, nor significantly lower than the water levels in 2014. The four seasonal plumes from 2003 were determined to be 1,373 (winter), 3,188 (spring), 3,002 (summer), and 3,141 (fall). The ambient lake temperature reported for the spring 1976 study was significantly lower than the 2003 study, but the temperatures were similar in summer and lower in 2003 for the winter and fall (see Tables 1. and 2. in the attached 2003 study).

Let me know if you need anything else.

Tarek Buckmaster
Lakes Erie and Huron Permits Unit
Permits Section, Water Resources Division
Michigan Department of Environmental Quality
517-284-5584
buckmastert@michigan.gov

From: Ramach, Sean [mailto:Ramach.Sean@epa.gov]
Sent: Thursday, August 06, 2015 9:49 AM
To: Buckmaster, Tarek (DEQ)
Subject: RE: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval

Cheers,

Sean Ramach

Environmental Scientist | P:312-886-5284 F:312-692-2502| ramach.sean@epa.gov
U.S. EPA, Region 5, Water Division, NPDES Programs Branch | 77 W. Jackson Blvd., WN-16J | Chicago, IL 60604

From: Buckmaster, Tarek (DEQ) [mailto:BUCKMASTERT@michigan.gov]
Sent: Wednesday, August 05, 2015 10:08 AM
To: Ramach, Sean; Ackerman, Mark
Subject: RE: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval

I am looking to see if I can find data on the lake levels, and have placed an order with our Records Center to retrieve the files that should include the studies. I'll let you know if or when I get the information.

Tarek Buckmaster
Lakes Erie and Huron Permits Unit
Permits Section, Water Resources Division
Michigan Department of Environmental Quality
517-284-5584
buckmastert@michigan.gov

From: Ramach, Sean [mailto:Ramach.Sean@epa.gov]
Sent: Wednesday, August 05, 2015 9:48 AM
To: Buckmaster, Tarek (DEQ); Ackerman, Mark
Subject: RE: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval

So definitively a 316(a) and actually supports a theory I have had on why 316(a) was promulgated… so cool.

Can the company produce the original 316(a) study documents? If not, then a full 316(a) study should be required as if one did not exist as we do not have the studies to reference, compare and assess. If they cannot be produced, then they do not exist.

The commission specifically called out lower lake levels as an issue of concern. How does current lake levels compare to those when the studies were conducted?

The current maximum generation is below what the study attempted to evaluate (3000 vs 3150MW), but they were not operating at full capacity during the study (only at 2750 MW). Models have improved significantly so this new study should attempt to collect data at full generation, but the modeling will probably be able to address it if not possible. But this should be clear that this is required and clarified that current max generation is only 3000, not the 3150 MW.

We can discuss more, but I really would like to see if the company can produce the original study documents or if you can dredge them up from DEQ archives.

Cheers,

Sean Ramach

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From: Buckmaster, Tarek (DEQ) [mailto:BUCKMASTERT@michigan.gov]
Sent: Wednesday, August 05, 2015 8:28 AM
To: Ramach, Sean; Ackerman, Mark

Subject: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet and 316(a) approval

Attached are the spreadsheet with the imbedded calculations/decisions (click on any field to see the basis for the number or decision) for the temperature evaluation at Monroe and the minutes from the October 1976 Public Hearing of the Michigan Water Resources Commission where the 316(a) demonstration was approved in place of requiring closed-cycle cooling based in part on the cost of installing closed-cycle cooling. The analysis presented to the Commission also set the maximum size of the mixing zone, under conservative maximum operating conditions producing 3,150 megawatts, at 2,500 acres.

Let me know if you have any questions.

Tarek Buckmaster
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Permits Section, Water Resources Division
Michigan Department of Environmental Quality
517-284-5584
buckmastert@michigan.gov

From: Bosak, Amanda (DEQ)
Sent: Wednesday, August 05, 2015 8:12 AM
To: Buckmaster, Tarek (DEQ)
Subject: RE: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet

It is in the temp sheet

Amanda Bosak
Aquatic Biologist
Michigan Department of Environmental Quality
Water Resources Division
P.O. Box 30458
Lansing, MI 48909-7958
517-284-5583

From: Buckmaster, Tarek (DEQ)
Sent: Tuesday, August 04, 2015 3:42 PM
To: Bosak, Amanda (DEQ)
Subject: DECO-Monroe Plt Thermal Discharge Comparison Spreadsheet

Hey Amanda,

I spoke with Sean Ramach in Region 5 and he'd like to see the excel spreadsheet version of Appendix I from your Fact Sheet. He has a pdf copy, but he wants to review the calculations used in the chart. Could you send it to me so I can forward it to them? Thanks

Tarek Buckmaster
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